



Novel circular resin development for composite structures in wind energy applications

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Webinar: A new generation of sustainable wind turbine blades

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This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101148066.

Project Overview



Project number: 101148066

Project coordinator: Gaiker Technology Center, Spain

www.ecoreswind.eu



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Consortium Overview

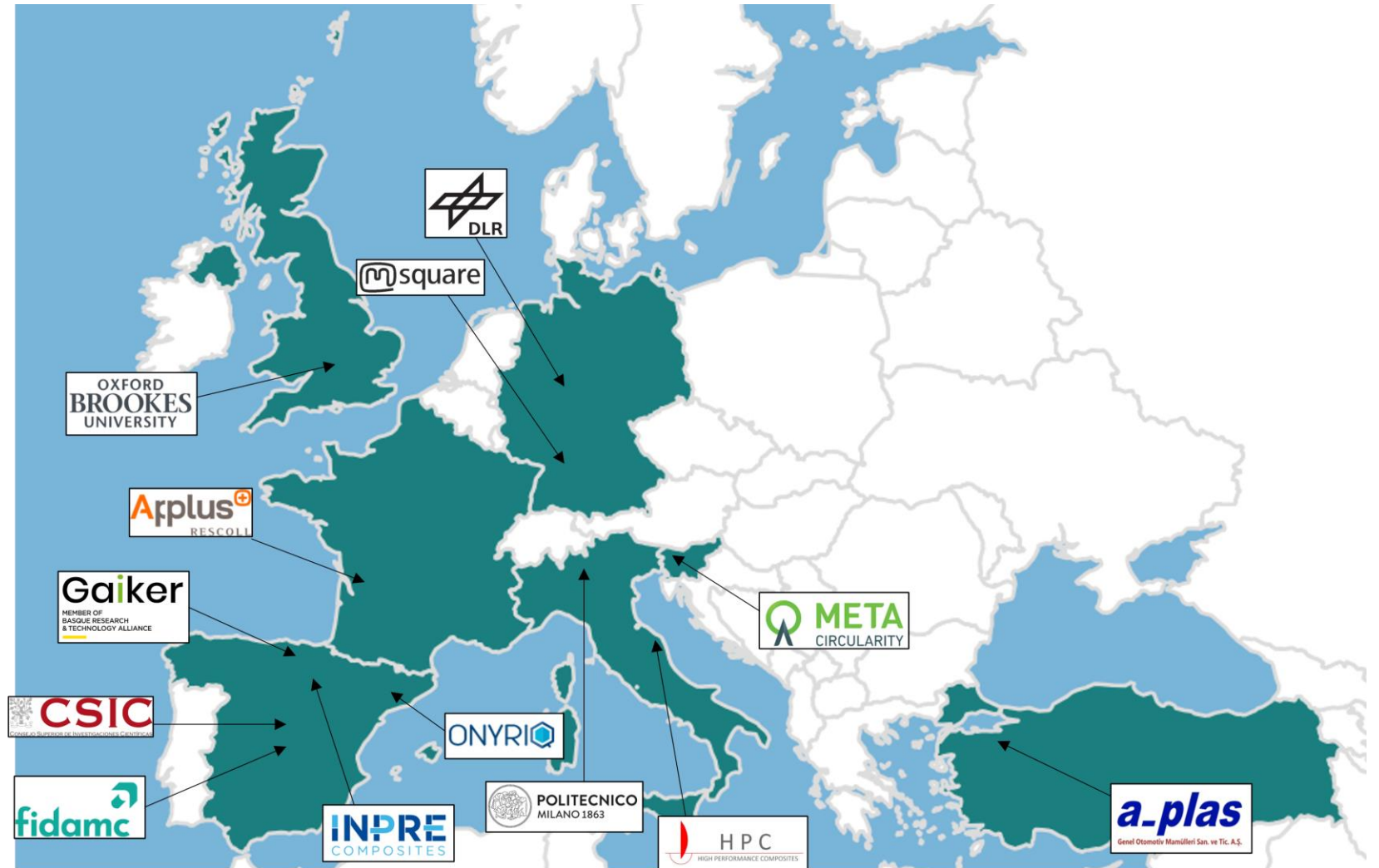
- 13 Partners

4 RTO

2 HEIs

4 SME

3 LEs



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Challenges & Solutions for Wind Energy Systems

Non-recyclable epoxy resins impacting EoL management

ResD1:
Recyclable thermoplastic-acrylic system

ResD2:
Biobased epoxy systems as reversible matrices

ResD3:
Recyclable epoxy systems for multiple recycling cycles

Lack of reliable design methods when introducing new materials

New specific modelling techniques and analysis methods

Decommissioning & Disassembly difficulties at deconstruction site

Disassembly strategies utilizing reversible bonding systems

2nd life and recycling limitations

Reshaping process

Chemical recycling to recover fibers and monomers



Objectives and ambition

- Development and validation of **recyclable**, **repairable**, and **reusable** resin systems for wind turbine blades and other components.
- Introduction of **reversible adhesives** and **life prediction techniques** to facilitate disassembly and decommissioning of wind turbines.
- Integration of advanced digital tools to **assess the circularity**, environmental, and economic performance of new materials.
- Collaboration with industry partners and educational organisations to create **digital learning resources** for future workforce training.



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ECORES - RESINS

ECORES - MoM

ECORES - Decommissioning
& Disassembly

ECORES - 2nd Life and Recycling



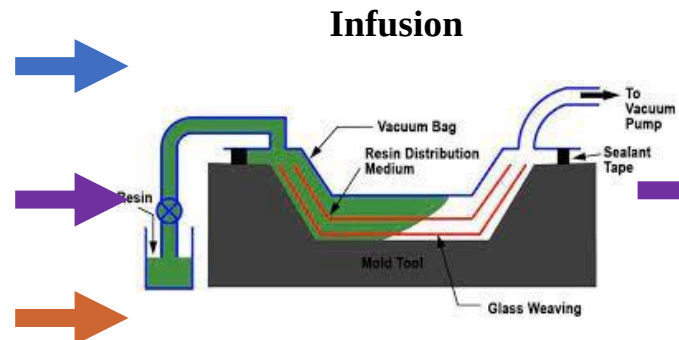
ResD1



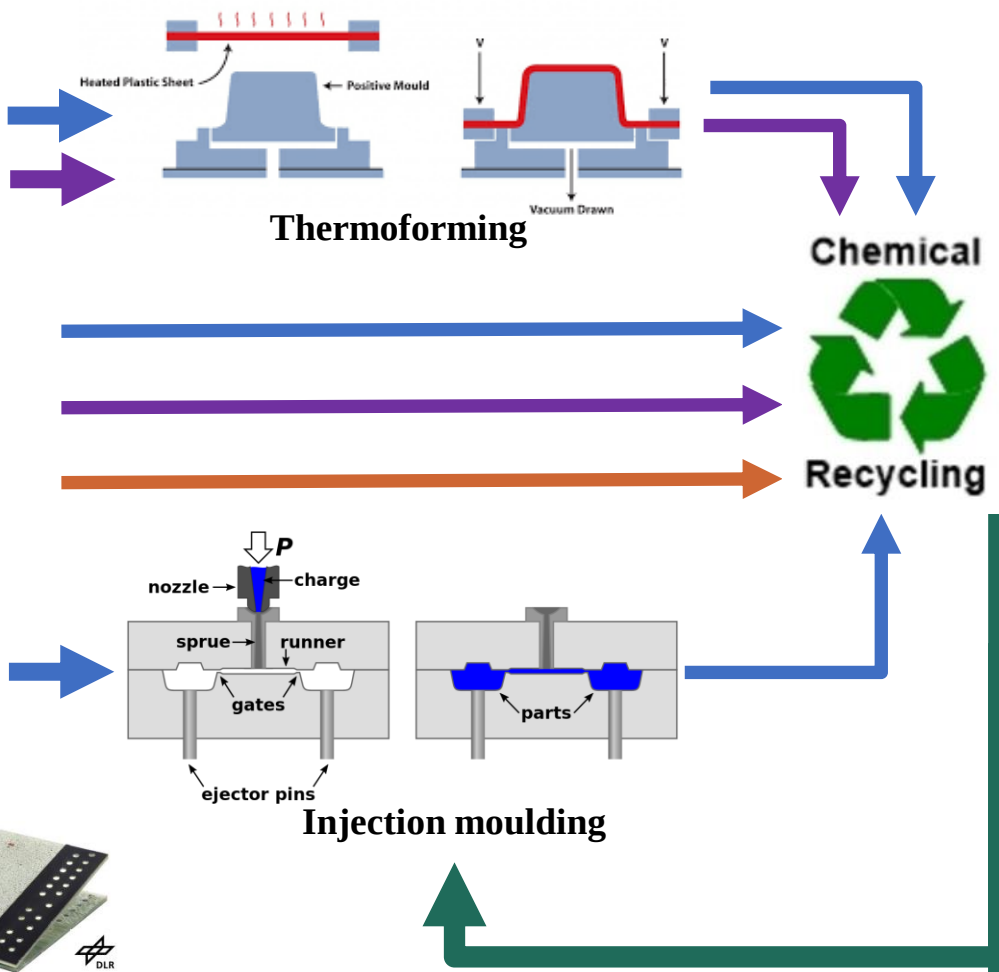
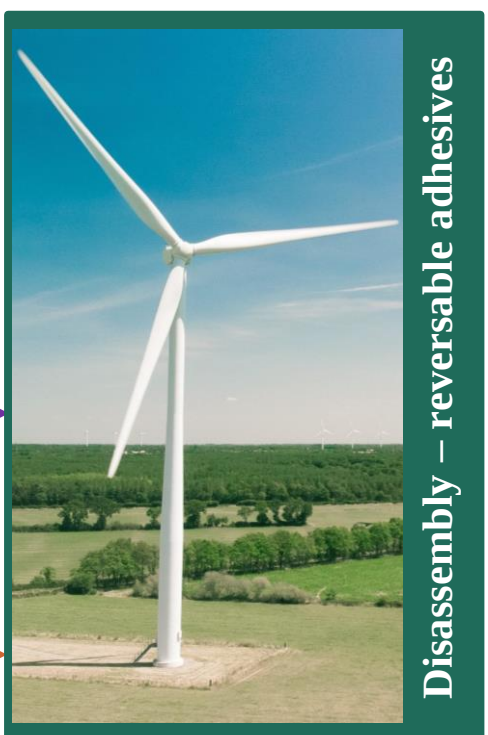
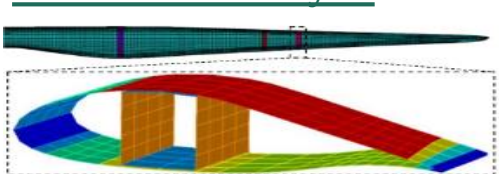
ResD2



ResD3



ECORES - Analysis



ECORES - Value chain sustainability

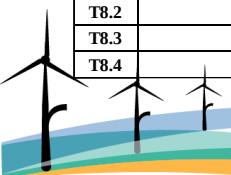
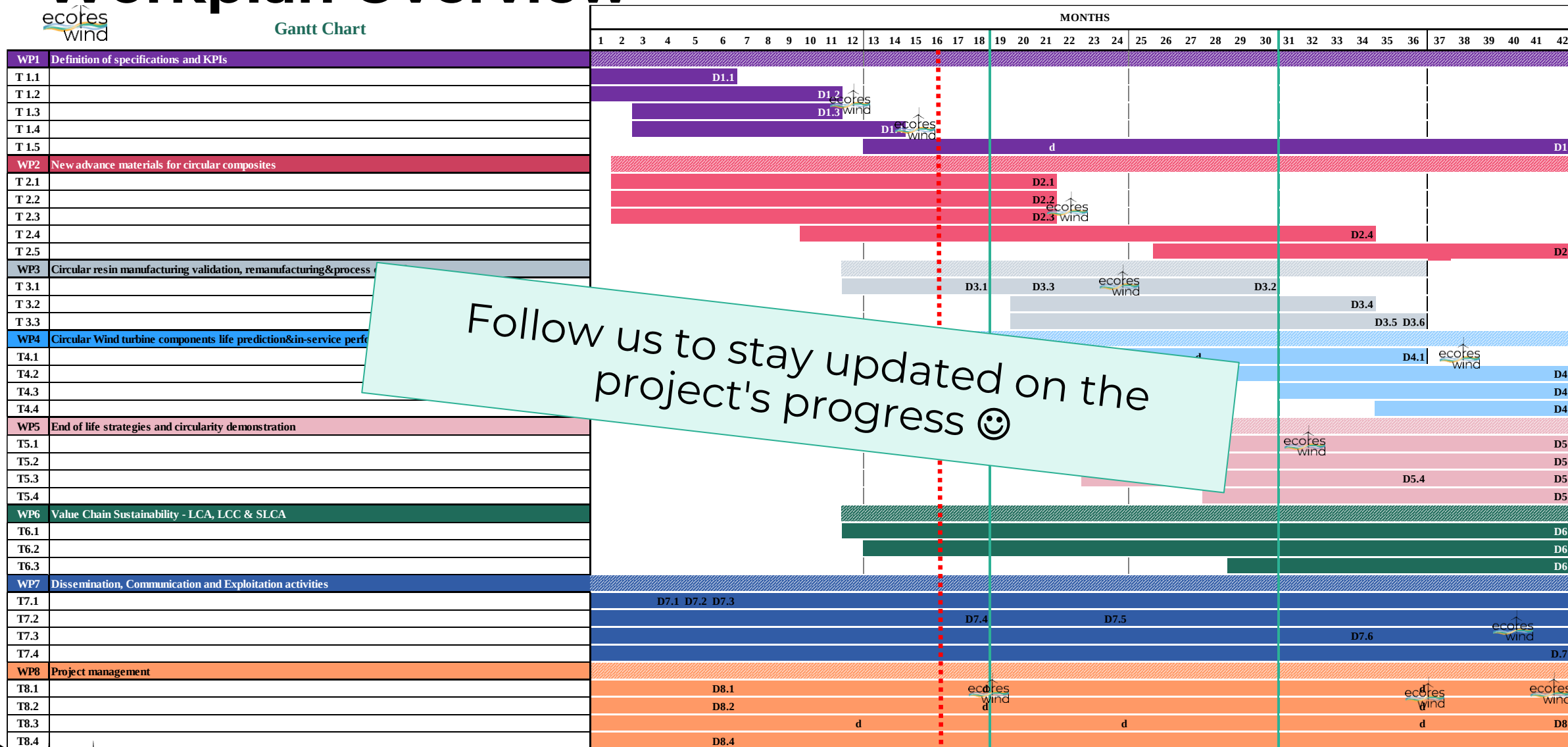


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Workplan Overview



Gantt Chart



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Innovative circular solutions for reuse of wind turbine components

Our initiative stands for the increase of circularity, particularly through the reuse and recycling of components of complex products such as of wind turbines by developing innovative circular resins and adhesives and facilitating their use leveraged by modular design of composites parts.

Learn more →

www.ecoreswind.eu

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Thank you.

GAIKER

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